

# CBCS SCHEME

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15BT43

Fourth Semester B.E. Degree Examination, Dec.2018/Jan.2019

## Molecular Biology

Time: 3 hrs.

Max. Marks: 80

**Note: Answer any FIVE full questions, choosing one full question from each module.**

### Module-1

- 1 a. Who proposed double helical model of B – DNA? List out the salient features of B – DNA. (08 Marks)  
b. What is Control dogma? Discuss on updation of central dogma. (08 Marks)

OR

- 2 a. Give a detailed account of Chromosomal theory of inheritance taking any two examples. (07 Marks)  
b. Explain the elongation process of prokaryotic DNA replication, with neat labeled diagram. (05 Marks)  
c. Discuss distinct features of Eukaryotic mRNA structure. (04 Marks)

### Module-2

- 3 a. Evaluate the role of rho factor in termination of transcription. (06 Marks)  
b. What is Splicing? Describe the mechanism of post transcriptional RNA processing with suitable example. (06 Marks)  
c. Give a note on Prokaryotic promoter sequence. (04 Marks)

OR

- 4 a. Critically evaluate the role of RNA polymerase in the process of transcription. (06 Marks)  
b. Define Splice some complex. Illustrate the mechanism of RNA editing. (06 Marks)  
c. Give a note on Si RNA. (04 Marks)

### Module-3

- 5 a. Compute the role of Post translational modifications in promoting maturity of nascent polypeptide. (07 Marks)  
b. Discuss the functional difference between prokaryotic and eukaryotic translation process. (05 Marks)  
c. Find the importance of protein targeting mechanism. (04 Marks)

OR

- 6 a. Compare the steps involved in initiation and termination of translation in Prokaryotes and Eukaryotes. (06 Marks)  
b. Describe the elongation process in Prokaryotic Protein synthesis. (06 Marks)  
c. Give an account of inhibitors of translation process. (04 Marks)

### Module-4

- 7 a. Explain the structure of galactose Operon. (06 Marks)  
b. Evaluate how attenuation plays the significant role in tryptophan biosynthesis regulation. (06 Marks)  
c. List the potential levels of gene regulation in eukaryotes. (04 Marks)

OR

- 8 a. Explain the structure of trp operon. (06 Marks)  
b. Evaluate the mechanism of inducible regulation of lac operon. (06 Marks)  
c. List the homeo box genes involved in insect development. (04 Marks)

**Module-5**

- 9 a. Describe the holiday nodel for homologous recombination. (07 Marks)  
b. What is Mutation? List the types. (05 Marks)  
c. Write a short note on Ontogenesis. (04 Marks)

OR

- 10 a. Conjugation is a process through which genetic recombination is possible in bacteria. Justify. (06 Marks)  
b. Define DNA repair. Describe mismatch repair process. (06 Marks)  
c. Write short note Insertion Sequence. (04 Marks)

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